

Notice of Allowability

Application No.

10/743,783

Examiner

ANH PHUNG

Applicant(s)

ISHIMARU ET AL.

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.
2. ☒ The allowed claim(s) is/are 1-42.
3. ☒ The drawings filed on 24 December 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 4/27/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other Search History.

Anh Phung
ANH PHUNG
PRIMARY EXAMINER

DETAILED ACTION

1. This Office Action is responsive to the U.S. Application Ser. No. 10/743,783 filed on December 24, 2003, claims **1-42** are pending in the application.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. This office acknowledges receipt of the following items from the Applicant:
Information Disclosure Statement (IDS) filed on April 27, 2004.
Information disclosed and listed on PTO 1449 was considered.

Examiner's Statement of Reasons for Allowance

4. Claims **1-42** are allowed.

Wang et al. (US 6,525,970), Mihnea et al. (US 6,426,898), Chang (US 5,991,204), Chang et al. (US 5,940,325) and Chen et al. (US 5,561,620) disclose a nonvolatile semiconductor memory device having an erase operation similar to that of the present application, but fail to teach:

"a positive potential is applied to said first conductor, holes are injected into said charge accumulation portion, in which electrons are accumulated, and thereby an erase operation is performed" as claimed in the independent claim **1**; or

"a current flows between said first and second semiconductor regions, holes are injected into said charge accumulation portion, in which electrons are accumulated, and thereby an erase operation is performed" as claimed in the independent claim **21**; or

Art Unit: 2824

“a positive potential is applied to said first conductor, holes generated between said first and second semiconductor regions are injected into a portion, which is disposed near the end of said second insulator film and on a side of said first conductor, and thereby an erase operation is performed” as claimed in the independent claim **22**;
or

“a positive potential is applied to said first line connected with a selected memory cell of said plurality of memory cells, holes are injected into said charge accumulation portion of said selected memory cell, in which electrons are accumulated, and thereby an erase operation is performed” as claimed in the independent claim **23**; or

“a positive potential is applied to said first line connected with a selected memory cell in said plurality of memory cells, holes are injected into said charge accumulation portion of said selected memory cell, in which electrons are accumulated, and thereby an erase operation is performed” as claimed in the independent claim **33**.

Any comments considered necessary by applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comment on Statement of Reasons for Allowance”.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **ANH PHUNG** whose telephone number is **(571) 272-1883**. The examiner can normally be reached on Monday-Friday from 8:00 AM to 4:30 PM.

Art Unit: 2824

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD ELMS**, can be reached on **(571) 272-1869**. The fax phone number for the organization where this application or proceeding is assigned is **(703) 872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

Art Unit: 2824

AKP



ANH PHUNG
PRIMARY EXAMINER